

Amendments to the Specification:

Please replace the paragraph beginning at page 22, line 9 as with the following amended paragraph:

In particular, Figure 4a shows a source 402 providing an undistorted lightwave signal 418, which passes through optical system 410 having PMD (e.g., caused by optical fiber 411) to produce distorted lightwave signal 420. Lightwave signal 420 then passes through PMD compensator 400 to reduce the distortions and produce adjusted lightwave signal 426. Compensator 400 is guided by sensing and control unit 470. This post-compensation implementation is thus analogous to that of Figure 1.

Please replace the paragraph beginning at page 22, line 15 as with the following amended paragraph:

Figure 4b, on the other hand, shows a pre-compensation implementation. In particular, undistorted lightwave signal 418 first passes through precompensator 400', which produces predistorted lightwave signal 420'. Lightwave signal 420' then passes through optical system 410' having PMD (e.g., caused by optical fiber 411'). The predistortions in signal 420', however, are selected to offset or reduce the impact of the distortions caused by optical system 410', thus lightwave signal 426' emerges from the system having reduced, if not fully compensated, distortions. Precompensator 400' is guided by sensing and control unit 480, which provides a precompensation signal indicative of the frequency-dependent polarization effects in downstream optical system 410'. Any of the embodiments described previously for compensation system 100 can be implemented as precompensator 400'.